ENHANCING STUDENTS' VOCABULARY MASTERY THROUGH CAKE APPLICATION AS A LEARNING MEDIA

(AN EXPERIMENTAL RESEARCH IN THE ELEVENTH GRADE STUDENTS OF SMA AL – IRSYAD TEGAL IN THE ACADEMIC YEAR OF 2023/2024)

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Abstract

The purpose of this study is to determine the impact of using Cake Application as a learning media to enhance students' vocabulary mastery at SMA Al – Irsyad Tegal. Cake Application is one of the technology-based learning media on smartphones to learn English. This application is used in research and is very easy to use to improve English skills such as reading, speaking, writing, especially to enhance vocabulary mastery. The research hypothesis is The use of Cake Application as a learning media has a positive effect on vocabulary mastery of Eleventh grade students at SMA Al – Irsyad in the academic year of 2023/2024. The population in this study is all of Eleventh grade students at SMA Al – Irsyad Tegal with a total of 169 students. The author uses cluster random sampling with a two-group design (experimental group and control group). The total number of samples is 53 students, 33 students as the Experimental group and 20 students as the Control group.

Before being given treatment, each group is given a Pre – test for the initial test. The experimental group is a group of students who carry out treatment using Cake Application as a learning media, while the control group is a group of students who carry out treatment without using Cake Application. After teaching for six meetings, the author gives a Post – test to the experimental group and the control group as a result of the treatment. The author analyzes the t-test data using Independent Sample T test with SPSS version 27, and the t-test value is 5.094.

While the t-table with reference to the formula (a / 2); (df) is 2.008. Thus, the t-value is greater than the t-table (5.094 > 2.008). Based on these results, H0 is rejected and H1 is accepted. This means that there is a positive influence on the vocabulary mastery of Eleventh grade students of SMA Al – Irsyad Tegal by using Cake Application as a learning media. Then, the author suggests that English teachers use Cake Application to improve students' English vocabulary mastery.

Keywords: Vocabulary Mastery, Learning Media, Cake Application.

INTRODUCTION

- Background of the Problems

English is not the primary language in Indonesia, but it is a foreign language taught in schools. Students need to develop language skills to understand it. These skills include reading, writing, listening, and speaking. They must also comprehend the vocabulary, grammar, and pronunciation of all language components (Kordja 2023; Krisnanto, Taufiqulloh, and Prihatin 2023). In general, vocabulary is a collection of words. The most important component of learning English is developing vocabulary, which requires mastery. This way can affect students' ability to understand texts, speak, and write clearly in English.

Mastering vocabulary is an essential part of learning English as a foreign language for students, especially in Senior High School or SMA. The broader one's vocabulary, the more fluent their communication skills become (Taufiqulloh, Nindya, and Rosdiana 2023; Widiyanti, Taufiqulloh, and Apriyani 2022). Additionally, vocabulary mastery plays a crucial role in English learning. It's not uncommon for many students or learners to face difficulties in mastering English. Perhaps this is because English is not their mother tongue, making the learning process challenging. One of the main obstacles faced is a lack of vocabulary. However, the most determining factor is the approach applied by the teacher. Effective methods may become useless if not implemented correctly by teachers, but a competent teacher can be ineffective if they use an inappropriate approach. On the other hand, the use of traditional learning media, such as whiteboard, dictionary and textbooks can bore students during English lessons, thereby hindering their vocabulary development. According to (-, Nindya, and Rosdiana

2023; Diningrat, Nindya, and Salwa 2020; Sulistianingsih and Aflahatun 2021; Sulistianingsih, Febriani, and Pradjarto 2019; Taufiqulloh et al. 2023; Yulizar 2020), students often feel bored when learning vocabulary because their learning is passive, such as just writing words on paper, passively receiving explanations from the teacher, or looking at words from a dictionary.

Based on observations made by the researcher during teaching practice, it was found that the vocabulary mastery at Eleventh Grade of SMA Al – Irsyad Tegal was inadequate. They have low motivation to learn English because they find it difficult. Apart from that, they also feel bored when taking English lessons in class. The researcher also noted that many students experienced vocabulary deficiencies and had difficulty memorizing new words, as seen from their inability to provide answers when asked questions. Students tend to be silent and unable to provide appropriate responses. To overcome this problem, there are many strategies that researcher can use. One vocabulary teaching strategy that can increase students' motivation and expand their vocabulary is using Cake Application as a learning media. This way can greatly improve the learning process, boost student motivation, and enhance their understanding of the subject matter(Meiristiani, Rofiudin, and Santoso 2021; Salsabila, Meiristiani, and Santoso 2022a, 2022b; Wulandari, Prihatin, and Santoso 2021).

Cake application is incredibly user – friendly for enhancing English skills, particularly vocabulary. This can make the learning process more enjoyable and provide motivation for students to enhance their English skills. Cake application is easy to use and represents a new way to learn English. Because it is a smartphone-based application, students can access it anytime and anywhere. The content is diverse and becomes free once students start using the app. Therefore, the researcher is interested in examining whether Cake Application can enhance students' vocabulary mastery, considering the difficulties students face in having a limited vocabulary. (Sulistianingsih et al. 2022)

- Identification of the Problems

Based on the provided background, several issues have been identified regarding the vocabulary learning of Eleventh grade students at SMA Al – Irsyad Tegal, as follows :

a) Students in the Eleventh Grade of SMA Al – Irysad Tegal lack of vocabulary.

b) The learning media used by English teachers make students feel bored and uninterested in learning, thus there is a need for new learning media to boost their motivation in learning English, especially their vocabulary.

- Limitation of the Problems

In order to maintain the research's focus, the researcher specifically explores the effectiveness of Cake Application in enhancing vocabulary mastery at the Eleventh Grade of SMA Al – Irsyad Tegal in the Academic Year of 2023/2024.

- Statement of the Problems

Based on the background above, the problem statement for this study can be summarized as follows:

“The use of Cake Application as a learning media is effective to enhance students’ vocabulary mastery for Eleventh Grade of SMA Al – Irsyad Tegal in the Academic Year of 2023/2024”.

- Objectives of the Research

The aim of this research is to evaluate the effectiveness of using Cake Application as a learning media in improving the vocabulary mastery for Eleventh Grade of SMA Al – Irsyad Tegal in the Academic Year of 2023/2024.

- Significances of the Research

This research aims to enhance understanding and skills in analyzing English learning issues, particularly concerning vocabulary. Additionally, it is anticipated that this study offers substantial theoretical and practical benefits.

- Theoretical Significances

The objective of this study is to investigate the effectiveness of Cake Application in facilitating students' mastery of vocabulary and its potential as a learning media for English language learning, both in and out of class. Additionally, the findings from this study can support and add to what we already know about how Cake Application can be helpful for students to enhance their vocabulary.

- Practical Significances

Practically, the reseacher hopes that the findings of this research can be used for:

a) Teachers

The research hopes that teachers may utilise Cake application as a learning media for teaching English, with the goal of helping students acquire more vocabulary as they are being taught. Additionally, the researcher hopes that this application might help teachers address students lack of interest or desire for studying English.

b) Students

The researcher anticipates that employing Cake Application can serve as an effective instructional tool to enhance students' motivation and eagerness in English learning, particularly in expanding their vocabulary.

c) For Researcher

This research provides new experiences for the researcher by enhancing teaching skills towards future students, and this research is required to fulfill the graduation requirements in the English Language Education Program at University Pancasakti Tegal.

1 METHODOLOGY

- Approach, Type, and Design of the Research

This research employs a quantitative approach with a Quasi experimental design. According to (Prof.Dr.Sugiyono 2013) Quasi-experimental research is a development of true experimental design that is often difficult to carry out. Even though it has a control group, this design is not always able to fully control external variables that influence the conduct of the experiment. Therefore, quasi-experimental research are often used because of the difficulty in obtaining a suitable control group for research. There are two classes in this study includes the experimental group receiving treatment, while the control group does not receive treatment.

The type of this research is an experimental research using vocabulary test scores to measure students' vocabulary mastery. Vocabulary test scores serve as the primary data for evaluating students' skills in vocabulary. In this study, the researcher adopted an experimental research approach, allowing for a detailed examination of the cause-and-effect relationships between the variables studied. By using an experimental research approach, the researcher hopes to make a significant contribution to understanding in the field being studied. It is hoped that the results of this research will provide new insights.

This research uses Non-Equivalent Control Group Design. Based on the opinion of (T.Campbell and C.Stanley 1984), this design represents the broadest educational experimental design, includes an experimental group and a control group undergo pre – test and post – test. The researcher aims to demonstrate that opting for Non-Equivalent Control Group Design can yield research outcomes that are both meaningful and dependable.

- Population, Sample and Technique of Sampling

Based on (Nuryadi et al. 2017), Population consists of all subjects who are the focus of research or observation and have similar characteristics. Population of this research was the Eleventh grade of students of SMA Al – Irsyad Tegal in the academic year of 2023/2024. There were six classes in the eleventh grade with the total number of students was 169 students. To make it clear, the researcher provides the data below :

Table 1. *The Total Population of the Eleventh Grade Students at SMA Al – Irsyad Tegal*

No.	Class	L	P	Total
1	XI – 1	20	0	20
2	XI – 2	20	0	20
3	XI – 3	0	33	33
4	XI – 4	0	32	32
5	XI – 5	30	0	30
6	XI – 6	0	34	34
Total		70	99	169

According to (Nuryadi et al. 2017), Sample is a part of the population selected to be observed directly and becomes the basis for drawing conclusions. From the population, the researcher took students in the class XI – 3 that consists of 33 students and students in the class XI – 2 that consists of 20 students. So, the total of samples in this research was 53 students.

In this research took 53 students and divided into two groups, there are XI – 3 as the experimental group and class XI – 2 as the control group. The researcher plans to use cluster random sampling. According to (Prof.Dr.Sugiyono 2013), Cluster random sampling is employed to select a sample when the objects under study or the data sources are vast. This sampling technique is often conducted in two stages. The first stage determines the sample areas, and the subsequent stage selects individuals within those areas through sampling as well. The researcher selected class XI – 3 which consisted of 33 students as the experimental group, while class XI – 2 which consisted of 20 students as the control group.

- Research Variables

This study utilizes two variables. Variables in this study are :

- Independent Variable

The independent variable (x) that causes influence. In this research, Cake Application is used as a learning media which is the independent variable.

- Dependent Variable

The dependent variable (y) in this study is improving students' vocabulary mastery of the eleventh-grade at SMA Al – Irsyad Tegal in the academic year of 2023/2024.

- Data Collecting Technique

The research data was based on the English vocabulary mastery test, which was given to both groups in the form of a Pre – test and Post – test. The researcher obtained these data from the vocabulary mastery test. The students who took this test were from the Eleventh grade at SMA Al – Irsyad Tegal in the academic year of 2023/2024.

Treatment is given for six meetings to the experimental group. During these meetings, the researcher provides treatment to the students in the experimental group who apply Cake Application as a learning media. The control group still receives traditional treatment. The researcher provides treatment to the students to obtain data about their vocabulary mastery.

- Research Instrument

Research instruments plays a crucial role for a researcher in systematically and objectively collecting, observing, and analyzing data to solve problems or test hypotheses. In this context, the test is used as a research instrument. In this context, the researcher employs documentation, pre – test and post – test.

According to Costa (2014) as cited in (Adri 2020), Pre – test and Post – test are among the top recommended assessment tools because they provide concise and effective direct evaluations that can be utilized to enhance student learning outcomes. The researcher tests both the experimental and control groups.

- The testing of instrument

a) Validity Test

(Brown 2003; Sulistianingsih et al. 2021; Sumekto et al. 2021; Taufiqulloh, Wardhani, and Sulistyawati 2018) states that until now, validity is often considered the most challenging criterion for an effective test, arguably holding the highest importance. Based on (Brown 2003) book, according to the opinion of Gronlund (1988), Validity relates to how accurately assessment results align with the assessment objectives, making them meaningful and useful. To evaluate the validity of the test used in this study, the researcher analyzes Try out for Pre – test and Post – test.

b) Reability Test

Reliability test is one that demonstrates consistency and dependability. When the researcher conducts the same test with the same student or pairs of students on two different occasions, the tests should yield consistent results. To address questions about reliability, various factors that could undermine test reliability must be investigated. In this study, the researcher intends to employ the Cronbach's alpha statistical method.

The use of Cronbach's alpha is a commonly employed method in reliability test is conducted to evaluate the internal consistency of a research instrument. It produces a value indicating the degree to which the items in the instrument are interrelated, with higher values signifying greater internal consistency. Therefore, Cronbach's alpha serves as a crucial tool in reliability test to ensure the dependability of research instruments.

- Technique of Analyzing Data

This research data is analyzed using the Independent Sample T-test. According to (Nuryadi et al. 2017), The Independent Sample T – test is employed to determine if there is a significant distinction between the means of two separate and unrelated samples.

- Description of the students' score

Criterion-referenced evaluation was described by (Brown 2003), this test aims to provide test-takers with feedback, typically in the form of grades, regarding specific course or lesson objectives. Following is how the researcher will categorise the scores :

Table 2. *Criterion Referenced Grading Systems*

Range of Scores	Description
0-20	Lowest
21-40	Low
41-60	Medium
61-80	High
81-100	Highest

- Normality test

As stated by (Nuryadi et al. 2017), Normality test is utilized to determine if the obtained data follows a normal distribution or not. A normal distribution is a symmetrical distribution where the mode, mean, and median are situated at its center. In the normality test, the researcher uses Shapiro Wilk. This analysis of data normality assesses the level of agreement between a specific theoretical distribution and the observed data. This test determines whether the scores in the sample can reasonably be considered to come from a population with a particular distribution.

In this research, to measure normality test, the researcher will use SPSS 27.0 Shapiro Wilk by the value of significance (a) = 0.05. The main steps in conducting normality testing were as follows :

a. If the significance value is greater than 0.05, the data is considered to have a normal distribution.

b. If the significance value is less than 0.05, the data is considered to not have a normal distribution.

- Homogeneity test

While Homogeneity test is a statistical procedure utilized to confirm whether two or more sample data groups originate from populations with equal variances. This assessment is carried out to determine the similarity of variances among the collected data. When evaluating homogeneity test of variance, the researcher plans to utilize Levene's test. The objective of this test is to confirm the equality of variance between two datasets.

The value of significance (a) was 0.05. The main steps in conducting homogeneity testing were as follows :

a. If the significance value is greater than 0.05, it suggests that the data distributions exhibit equal variances (homogeneous).

b. If the significance value is less than 0.05, it indicates that the data distributions do not exhibit equal variances (not homogeneous).

- Hypothesis test

In hypothesis test, the researcher plans to employ a comparative hypothesis. This analysis is employed to compare the averages of two different groups or samples with the aim of determining whether there are significant differences between the two groups. Here are the hypotheses :

a) H0 (Hypothesis Null) : There is no any improvement on students' vocabulary mastery at the Eleventh Grade of SMA Al – Irsyad Tegal after using Cake Application.
b) Ha (Hypothesis Alternative) : There is any improvement on students' vocabulary mastery at the Eleventh Grade of SMA Al – Irsyad Tegal after using Cake Application. It means that Cake application is effective in enhancing students' vocabulary mastery.

2 RESULTS

2.1 Research Result

2.1.1 Profile of the School

This research takes place at SMA Al – Irsyad Tegal from 27th April to 14th May 2024, for classes XI – 2 and XI – 3. This school is one of the private schools in Tegal city with a good reputation and winning many academic and non-academic awards in various competitions. SMA Al – Irsyad Tegal is located at Gajah Mada Street No. 128, Tegal city, Central Java. This school has good administrators and adequate facilities to support the teaching and learning process, such as classrooms, laboratories, a library, a mosque, an administrative room, a principal's office, teachers' rooms, and a cafeteria. The school has 45 teachers, 2 of whom are English teachers. The total number of students in this school is 425 students.

2.1.2 Subject of the Study

The sample used in this research is the Eleventh grade students from SMA Al – Irsyad Tegal, with XI – 2 as the control group and XI – 3 as the experimental group. In the experimental group, students learn English vocabulary using Cake Application as a learning media. The sample is taken using cluster random sampling.

2.1.3 Validity Test Result

To determine the validity of the instrument, it is necessary to conduct an instrument validity test. The validity test stage is to measure questions that are considered valid for use in Pre-test and Post-test.

In this test, 50 multiple-choice questions are given to the students as a try out in the class XI – 1. Data is considered valid if the R-value is greater than the R-table. In this research, there are 40 questions that are considered valid. The validity test in this research is conducted on 20 students from the class XI – 1, using a significance level (α) of 5% or 0.05.

To find R-table, we first find Df = N – 2 = 20 – 2 = 18, so the R-table is 0.444. The following instrument is deemed valid and tested using SPSS version 27 :

Table 3. *The Result of Validity test*

No. Soal	Corrected Item-Total Correlation	R Tabel	Keterangan
S1	-0.115	0.444	Tidak Valid
S2	0.186	0.444	Tidak Valid
S3	-0.284	0.444	Tidak Valid
S4	-0.163	0.444	Tidak Valid
S5	0.149	0.444	Tidak Valid
S6	0.670	0.444	Valid
S7	0.679	0.444	Valid
S8	0.548	0.444	Valid
S9	0.592	0.444	Valid
S10	0.575	0.444	Valid
S11	0.658	0.444	Valid
S12	0.592	0.444	Valid
S13	0.851	0.444	Valid
S14	0.658	0.444	Valid
S15	0.491	0.444	Valid
S16	0.709	0.444	Valid
S17	0.729	0.444	Valid
S18	0.719	0.444	Valid
S19	0.617	0.444	Valid
S20	0.628	0.444	Valid
S21	0.504	0.444	Valid
S22	0.638	0.444	Valid
S23	0.680	0.444	Valid
S24	0.783	0.444	Valid
S25	0.670	0.444	Valid
S26	0.038	0.444	Tidak Valid
S27	-0.342	0.444	Tidak Valid
S28	0.166	0.444	Tidak Valid
S29	-0.206	0.444	Tidak Valid
S30	-0.005	0.444	Tidak Valid
S31	0.648	0.444	Valid
S32	0.701	0.444	Valid
S33	0.457	0.444	Valid
S34	0.635	0.444	Valid
S35	0.709	0.444	Valid
S36	0.515	0.444	Valid
S37	0.548	0.444	Valid
S38	0.701	0.444	Valid
S39	0.581	0.444	Valid
S40	0.534	0.444	Valid
S41	0.626	0.444	Valid
S42	0.659	0.444	Valid
S43	0.920	0.444	Valid
S44	0.711	0.444	Valid
S45	0.732	0.444	Valid
S46	0.722	0.444	Valid
S47	0.611	0.444	Valid
S48	0.479	0.444	Valid
S49	0.637	0.444	Valid
S50	0.711	0.444	Valid

Based on the table above, it shows that 10 items are considered invalid because the resulting coefficient is less than 0.444. Therefore, it is necessary to replace or remove these items.

2.1.4 Reability Test Result

Reliability testing aims to show how consistent a measurement result is when repeated two or more times. If the reliability is less than 0.6, it is not good, a value of 0.7 is acceptable, and above 0.8 is good. Based on the calculation of Cronbach's Alpha formula using SPSS version 27, the reliability coefficient from the research is as follows:

Table 4. *The Result of Reability test*

Reliability Statistics

Cronbach's Alpha	N of Items
.967	40

Based on the table above, all statement variables have values that can be categorized as acceptable reliability because they are greater than the Cronbach's alpha value of 0.6.

2.1.5 Treatment Analysis

At the validity testing stage, try out is used to test the questions that will be used in the pre-test and post-test. The try out is conducted on April 24th 2024 in the class XI – 1 consists of 20 students. After that, the results of the validation of 50 try out questions show that only 40 questions are valid. Then a few days later, the researcher conducts Pre-test simultaneously for the experimental and control groups. They are given the same set of 40 multiple-choice questions. Pre – test for XI – 3 takes place on 27th April 2024, and for XI – 2 on 29th April 2024.

After Pre – test is carried out, the next step is to give treatment to the experimental group, while conventional learning is conducted for the control group. The treatment consists of 6 sessions. Due to the limited time given by the school, the researcher uses other lesson hours for the treatment. Each session lasts about 45 or 90 minutes.

The first treatment meeting is conducted on 29th April 2024, for 45 minutes. Students in the experimental group learn English using Cake Application. The material used is Prepositions, accompanied by videos and questions available in the application. Before starting, students download Cake Application from the Play Store for Android users and iOS for Apple users. During the treatment, students watch videos with subtitles to help them learn. They fill in missing sentences in the video, with Indonesian subtitles provided for the missing parts, and students fill them in English. The researcher provides Cake Application Premium accounts to students, who form groups to use 1 premium account together, so they can freely use paid features. The control group also has their first treatment on 29th April 2024, for 45 minutes, learning about Analytical Exposition text material which is still used in schools. The control group only receives lecture learning by paying attention to Analytical Exposition text PowerPoint material from the researcher as a teacher.

The second treatment meeting is conducted on 30th April 2024, for 45 minutes of learning. As usual, students use Cake Application as a learning media. The material used is Action verbs with material videos and questions available in the application. Students are asked to understand the material and work on the questions, by understanding the vocabulary of various action verbs and memorizing them to fill in the questions. Students are also given a premium account in each group to unlock paid features, although some features are free, students are also better off using a premium account to learn more deeply. Meanwhile, the second treatment for the control group is on 30th April 2024, for 45 minutes of learning. Students continue to use Analytical exposition text material, the researcher as teacher explains the material again using a whiteboard, then students are given questions using assignment sheets and work in pairs.

At the third treatment meeting on 4th May 2024, for 90 minutes of learning. The experimental group as usual uses Cake Application as a learning media. Students learn the Adjectives vocabulary from the application. Each student takes a quiz and understands the material through videos. Each student can also use a premium account as a group so they can study the material more deeply together. Every time they do this, students will get a grade according to their abilities and that will be a benchmark for students to enhance their vocabulary. Meanwhile, at the third meeting for the control group on 6th May 2024, for 90 minutes of learning. They still use Analytical Exposition text material and the researchers give them questions using Quizizz to work on in groups. After that the value will immediately appear in Quizizz.

The fourth treatment meeting is held on 7th May 2024, for 45 minutes of learning. They learn the vocabulary of Stative verbs, because they are important words used in everyday life. As usual, students learn through Cake Application by watching videos and taking quizzes to improve their vocabulary. Meanwhile, for the control group, at the fourth meeting held on 6th May 2024, the researcher takes another class hour to teach because the time given by the school was limited, for 45 minutes of learning. The material for the control group changes to Hortatory exposition text. The researcher as a teacher teaches the material using PowerPoint and students only pay attention while writing the material in the book.

The fifth treatment meeting, for the experimental group, is held on May 8th 2024, for 45 minutes of learning. They understand vocabulary material in explaining everyday situations. The usual learning media is using Cake Application to increase their vocabulary by watching videos and taking quizzes. Meanwhile, the fifth meeting in the control group is held on May 7th 2024, for 45 minutes of learning. The researcher as a teacher explains Hortatory exposition text material again and students are given assignment sheets. They are asked to work in pairs, after which they will get a score.

The sixth treatment meeting, in the experimental group, is held on 11th May 2024, for 45 minutes of learning. Students are asked to understand vocabulary material related to daily routines in Cake Application. They watch the video material after that do a quiz to improve their vocabulary. The sixth meeting of the control group is held on 13th May 2024. The researcher explains Hortatory Exposition text material again using a whiteboard. Then students are asked to do a Quizizz on Hortatory exposition text material. After the break, the control group continues to take Post-test from the researcher to test their vocabulary skills from the results during treatment without using Cake Application. Meanwhile, on 14th May 2024, the experimental group carries out Post-test as a result of treatment using Cake Application as a learning media.

2.1.6 Normality Test Result

The normality test is conducted to assess the distribution of data in a group to determine whether the distribution is normal or not. In this study, the normality test uses the Shapiro-Wilk test because the number of students is less than 100, with the criteria: if the significance is > 0.05, then the data is normally distributed, and if the significance is < 0.05, then the data is not normally distributed.

The normality test is carried out in two classes: the control group and the experimental group. This study uses Pre – test and Post – test from both groups for normality test.

Table 5. *The Result of Normality Test*

Tests of Normality

		Shapiro-Wilk		
	Kelas	Statistic	df	Sig.
Hasil Belajar Siswa	Pre-test Experimental Group	.960	33	.251
	Post-test Experimental Group	.939	33	.064
	Pre-test Control Group	.915	20	.078
	Post-test Control Group	.946	20	.312

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

Based on the explanation above, the data is normally distributed if the significance is > 0.05. The normality test results from Pre – test control group show a significance of 0.078, Post – test control group shows a significance of 0.312, while Pre – test experimental group shows a significance of 0.251, and Post – test experimental group shows a significance of 0.064. According to the Shapiro – Wilk criteria, with a significance > 0.05, the data is normally distributed. This means that the results of the normality test for all variables are normally distributed because the significance value is > 0.05.

2.1.7 Homogeneity Test Result

The homogeneity test is used to identify if the variants in the test are the same or not. The calculation results are based on the Sig value in the test of homogeneity of the table. In summary, the homogeneity test is obtained as follows:

Table 6. *The Result of Pre – test Homogeneity Test*

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	26.072	1	51	.335
	Based on Median	19.009	1	51	.323
	Based on Median and with adjusted df	19.009	1	31.988	.342
	Based on trimmed mean	25.593	1	51	.343

Table 7. *The Result of Post – test Homogeneity Test*

Test of Homogeneity of Variance

		Levene Statistic	df1	df2	Sig.
Hasil Belajar Siswa	Based on Mean	8.262	1	51	.239
	Based on Median	4.521	1	51	.278
	Based on Median and with adjusted df	4.521	1	39.370	.240
	Based on trimmed mean	8.269	1	51	.256

Based on the output above, it is known that the significance value (Sig.) for Pre – test variable is 0.335 and for Post-test variable is 0.239, which is greater than 0.05. It can be concluded that the data variance is the same or homogeneous.

2.1.8 Pre-test and Post-test Descriptive Statistics

The descriptive analysis displays the average Pre – test and Post – test scores for each group. Here are the results :

Table 8. *Descriptive Statistics*

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-test Experimental Group	33	52.5	72.5	61.591	4.8339
Post-test Experimental Group	33	65.0	87.5	76.894	5.8306
Pre-test Control Group	20	35.0	72.5	51.625	12.2816
Post-test Control Group	20	40.0	75.0	57.500	10.1307
Valid N (listwise)	20				

The average Pre – test result for the Control group was 51.62, lower than the results for the Experimental group with a result of 61.59. Meanwhile, the average Post – test results show that the Control group got a result of 57.50, which is still low compared to the Experimental group with a result of 76.89, which shows an improvement after using Cake Application as a learning media.

2.1.9 T – Test Result

The researcher uses the Independent Sample T – test, with the following results :

Table 9. *The Result of Independent Sample T – test*

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Hasil Belajar Siswa	Equal variances assumed	.982	.239	5.094	51	<,001	19.3939	2.1871	15.0032	23.7847
	Equal variances not assumed			4.887	34.887	<,001	19.3939	2.4823	14.2985	24.4894

Based on the "Independent Samples Test" output table in the "t-test for Equality of Means" section, it is known that the Sig. (2-tailed) value is 0.001, which is less than 0.05. Therefore, it can be concluded that H0 is rejected and Ha is accepted. Thus, it can be concluded that there is a significant difference

between the average learning outcomes of students in Post – test Experimental group and the Control Group.

To compare the t-value with the t-table in the Independent Sample T – test, we need to pay attention to the t-value in the results of the Independent Sample T – test. The t-value of test is 5.094.

- The formula for the t-table is : $(\alpha / 2)\ ;\ (\mathrm{df})$

(α / 2) ; (df) = (0,05 / 2) ; (51) = 0,025 ; 51

It is found that the t-table value is 2.008.

- Thus, the result is :

t-value > t-table = 5.094 > 2.008

Therefore, it can be concluded that H0 is rejected and Ha is accepted, which means there is a significant difference in the average learning outcomes of students in Post – test Experimental group compared to the Control group.

3 CONCLUSIONS

Cake Application is a learning media for studying English for all age groups, especially for students at SMA Al – Irsyad Tegal, who are encouraged to improve their vocabulary. Based on the data analysis results, the Independent Sample T – test Post – test scores between Control group and Experimental group show that Experimental group scores higher than Control group. The average Post – test score of Experimental class is 76.89, while Control class is 57.50.

The hypothesis test indicates that H0 is rejected and H1 is accepted, which means Cake Application is effective in enhancing English vocabulary of Eleventh grade students at SMA Al – Irsyad Tegal. The effectiveness of Cake Application in enhancing the English vocabulary of these students in the academic year of 2023/2024 is demonstrated by the Independent Sample T-test data, where the Sig. (2-tailed) value is 0.001, which is less than 0.05, indicating that H1 is accepted and H0 is rejected. The research results show a significant difference in vocabulary mastery between students before and after using Cake Application as a learning media. It can be concluded that Cake Application is an effective learning media for helping students enhance their English vocabulary mastery.

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REFERENCES

-, Taufiqulloh, Meyga Agustia Nindya, and Ihda Rosdiana. 2023. “Using LMS “Elsakti’ as an Effective Assessment Medium for English EFL Learning.” *Studies in English Language Teaching* 11(3). doi: 10.22158/selt.v11n3p54.

Adri, Rantih Fadhlya. 2020. “Pengaruh Pre-Test Terhadap Tingkat Pemahaman Mahasiswa Program Studi Ilmu Politik Pada Mata Kuliah Ilmu Alamiah Dasar.” *Menara Ilmu* XIV(No.01):81–85.

Brown, H. Douglas. 2003. *Language Assessment*. 1st ed. San Francisco: Pearson ESL.

Diningrat, Syaiputra Wahyuda Meisa, Meyga Agustia Nindya, and Salwa. 2020. “Emergency Online Teaching: Early Childhood Education Lecturers’ Perception of Barrier and Pedagogical Competency.” *Cakrawala Pendidikan* 39(3). doi: 10.21831/cp.v39i3.32304.

Kordja, Baharuddin. 2023. “Improving Secondary School Students ’ Vocabulary Mastery through Scattergories Game.” 3(2):181–89.

Krisnanto, Hery, Taufiqulloh Taufiqulloh, and Yoga Prihatin. 2023. “Pengaruh Model Pembelajaran Flipped Classroom Terhadap Pelajaran Bahasa Inggris Di SMP Negeri 1 Pangkah.” *Journal of Education Research* 4(3).

Meiristiani, Noeris, Rofiudin Rofiudin, and Masfuad Edi Santoso. 2021. "Reading Aloud to Increase Parental Engagement in Children Literacy during the Covid-19 Pandemic." *ASEAN Journal of Empowering Community* 2(1). doi: 10.24905/ajecom.v2i1.2.

Nuryadi, Tutut Dewi Astuti, Endang Sri Utami, and M. Budiantara. 2017. *Dasar - Dasar Statistik Penelitian*. 1st ed. Ngringinan, Palbapang, Bantul, Bantul, Yogyakarta: SIBUKU MEDIA.

Prof.Dr.Sugiyono. 2013. *Metode Penelitian Kuantitatif Kualitatif Dan R&D*. 19th ed. Bandung: Alfabeta Bandung.

Salsabila, Dias Aulia, Noeris Meiristiani, and Masfuad Edy Santoso. 2022a. "An Analysis of the Use of Positive and Negative Politeness in EFL Classroom." *Building Teachers and Students' Literacies in English Language Teaching: Conference Proceeding* (July).

Salsabila, Dias Aulia, Noeris Meiristiani, and Masfuad Edy Santoso. 2022b. "An Analysis of the Use of Positive and Negative Politeness in EFL Classroom." *Building Teachers and Students' Literacies in English Language Teaching: Conference Proceeding* (July).

Sulistianingsih, Endang, and Nur Aflahatun. 2021. "Digital Storytelling: Computer Based Learning Activity to Enhance Young Learner Vocabulary." *SSRN Electronic Journal*. doi: 10.2139/ssrn.3736914.

Sulistianingsih, Endang, Rizka Febriani, and Jcs Pradjarto. 2019. "The Effect of Interactive Board Games (IBG) on Vocabulary Achievement." *Langkawi: Journal of The Association for Arabic and English* 5(2). doi: 10.31332/lkw.v5i2.1458.

Sulistianingsih, Endang, Yulia Nur Ekawati, Sri Wardhani, and Rizqa Lestari. 2022. "Communication Strategies in Online Class: A Case on EFL Teachers." *SSRN Electronic Journal*. doi: 10.2139/ssrn.4205508.

Sulistianingsih, Endang, Taufiqulloh Taufiqulloh, Sri Wardhani, and Sanday Jamaludin. 2021. "The Effect of Web-Based Language Learning Activities on Reading Comprehension in the EFL Classroom." *English Focus: Journal of English Language Education* 4(2).

Sumekto, Didik Rinan, Taufiqulloh Taufiqulloh, Heny Setyawati, Siti Hikmah, and Imam Ghozali. 2021. "Understanding the Paralinguistic Features Disclosure Depicted in the Lecturer's Visual Modes of Writing Class Instruction." *3L: Language, Linguistics, Literature* 27(4). doi: 10.17576/3L-2021-2704-13.

Taufiqulloh, Taufiqulloh, Meyga Agustia Nindya, and Ihda Rosdiana. 2023. "TECHNOLOGY-ENHANCED FORMATIVE ASSESSMENT: UNRAVELING INDONESIAN EFL LEARNERS' VOICES." *English Review: Journal of English Education* 11(3). doi: 10.25134/erjee.v11i3.9076.

Taufiqulloh, Taufiqulloh, Sri Wardhani, and Anin Eka Sulistyawati. 2018. "NEEDS ANALYSIS IN EFL READING CLASS: A STUDY TO PROMOTE LEARNER AUTONOMY THROUGH SELF-ASSESSMENT." *English Review: Journal of English Education* 7(1):167. doi: 10.25134/erjee.v7i1.1538.

T.Campbell, Donald, and Julian C.Stanley. 1984. *Experimental and Quasi Experimental Designs For Research*. Vol. 29. 1st ed. Dallas Geneva, III. Hopewell, N.J. Palo Alto London: Houghton Mifflin Company Boston.

Widiyanti, Isnen, Taufiqulloh Taufiqulloh, and Dewi Apriyani. 2022. "Child-Friendly School Assessment of Infrastructure Standards for Junior High School."

Wulandari, Slara Ayu, Yoga Prihatin, and Masfuad Edi Santoso. 2021. "Language Dynamism: A Cross-Cultural Analysis of Indonesian Political Leader Speech During Covid-19 Pandemic." *South Asian Journal of Social Sciences and Humanities* 2(5). doi: 10.48165/sajssh.2021.2503.

Yulizar, Ismi. 2020. "The Effect of Students' Achievement in Studying Vocabulary through Scramble Method at SMP N 1 Kualuh Hulu." *Tarbiyah Bil Qalam: Jurnal Pendidikan Agama Dan Sains* 4(2):37–46.